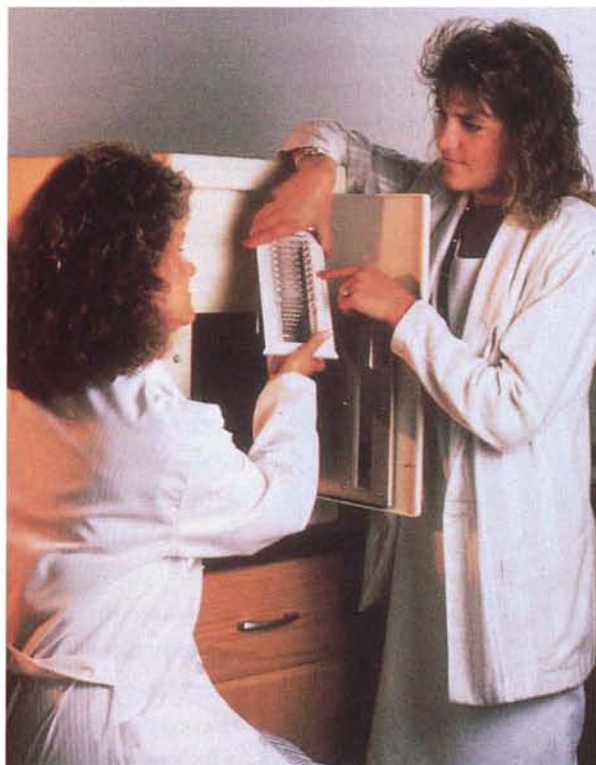


Microbiology System



Below, a technician is explaining the operation of a VITEK automated microbiology system, a time-and-labor-saving device that detects harmful microorganisms in the human body, identi-



fies the type of microorganism causing infection, and indicates the degree of susceptibility of the offending organism to various types of antibiotics.

The VITEK system speeds up the process of treating a patient by providing the physician clear, accurate diagnostic information and quick identification of the most effective medication.

It makes available

in a few hours results that formerly required upwards of 24 hours to obtain, thereby contributing to reduced hospital stay.

The technology that made the VITEK system possible originated in a NASA-sponsored study aimed at a system for manned spacecraft that could rapidly and accurately measure microbial growth, even in zero gravity. The technology spawned formation of a new company and served as the cornerstone for a broad line of medical and industrial diagnostic devices. The company — bioMérieux Vitek, Inc., formerly VITEK Systems, Inc., Hazelwood, Missouri — is now one of the world's largest medical diagnostic corporations.

In the traditional manual method of testing for harmful organisms, or pathogens, specimens of a patient's body fluid are prepared in cultures, which are incubated for two to three days and studied for growth; from such study, microbiologists can determine the presence of pathogens and identify them.

The VITEK system does not replace the microbiologist, it simply allows greater speed and flexibility in testing. The process begins with the Test Card, a disposable plastic kit approximately the size of a playing card. Each card contains 30 wells, which are loaded with the biochemical reagents or antimicrobials needed for the test to be performed; one series of cards is used to identify the organism, the other is used to determine its susceptibility to various antibiotics.

Below, a Test Card is being marked with a sample number that the system's computer will read automatically. **At right**, the card is being prepared to receive a sample by means of a transfer tube. After the samples are vacuum-drawn into the card's wells, the cards are sealed and loaded into the Reader/Incubator (**far right**).

During a four to 24-hour incubating cycle (depending on the nature of the test), a photo-optical scanner periodically scans each specimen, monitoring changes in cell growth, which are reported to the computer. When growth reaches a predeter-





McDonnell Douglas Corporation was the contractor for the initial NASA project begun in 1966. Aware of the commercial potential, McDonnell Douglas invested several years of company development effort in what became known as the AutoMicrobic System, the ancestor of VITEK SR. and VITEK JR., then created VITEK Systems as a subsidiary to produce and market the system. When VITEK was divested by McDonnell Douglas in 1989, the company became part of the well-known globally-operating French pharmaceutical diagnostics company

mined level, it indicates the presence of pathogens. A preliminary report may be requested at any time; the final report is printed automatically as soon as the results are available.

This basic technology is employed in two configurations: the VITEK, with a test card capacity from 60 to 240, and the VITEK JR., a scaled down version (30 cards) designed to maximize laboratory efficiencies at both large and small hospitals.

A companion system called VIDAS (VITEK Immune Diagnostic Assay System) is a totally automated system that detects bacteria, viruses, toxins and antibodies directly from patient specimens and provides immunochemistry results. VIDAS can operate as a stand-alone system or team with VITEK or VITEK JR.

bioMérieux. With that merger, the combined firm became the eighth largest medical diagnostic corporation in the world. ●

